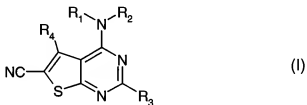


AMENDMENTS TO THE CLAIMS:

Please amend claims 1 and 10. This listing of claims will replace all prior versions and listings of claims in the application. Deletions appear in ~~strike through font~~, and additions are underlined.

Complete listing of claims

- 1) (Currently Amended) A compound of formula (I):



or a pharmaceutically acceptable salt thereof wherein

- R₁ and R₂ either
 - (a) independently represent :
 - (i) a hydrogen atom
 - (ii) a group chosen from alkyl, alkenyl and alkynyl groups, wherein each alkyl, alkenyl and alkynyl group is independently and optionally substituted by one or more substituents chosen from halogen atoms, hydroxy, alkoxy, aryloxy, alkylthio, hydroxycarbonyl, alkoxycarbonyl, ~~alkoxy carbonyl~~, mono- and di-alkylaminoacyl, oxo, amino, and mono- and di-alkylamino groups; or
 - (iii) a group of formula



wherein n is an integer from 0 to 4 and R^6 represents a
cycloalkyl or cycloalkenyl group;

or

(b) R_1 and R_2 form, together with the nitrogen atom to which they are attached, a 3- to 8-membered ring comprising from 1 to 4 heteroatoms chosen from nitrogen, oxygen and sulphur, which ring is saturated or unsaturated and optionally substituted by one or more substituents chosen from halogen atoms, alkyl, hydroxy, alkoxy, acyl, hydroxycarbonyl, alkoxycarbonyl, alkylenedioxy, amino, mono- and di-alkylamino, mono- and di-alkylaminoacyl, nitro, cyano and trifluoromethyl groups;

- R_3 is a group of formula



wherein n is an integer from 0 to 4 and G represents a monocyclic or bicyclic aryl or heteroaryl group comprising from zero to four heteroatoms which group is optionally substituted by one or more substituents chosen from:

- (i) halogen atoms;

- (ii) alkyl and alkylene groups, wherein each alkyl and alkylene group is independently optionally substituted by one or more substituents chosen from halogen atoms; and
 - (iii) phenyl, hydroxy, hydroxyalkyl, alkoxy, alkylenedioxy, aryloxy, alkylthio, amino, mono- and di-alkylamino, acylamino, nitro, acyl, hydroxycarbonyl, alkoxycarbonyl, cyano, difluoromethoxy and trifluoromethoxy groups;
- R₄ represents a hydrogen atom, an alkyl or an aryl group;

with the proviso that the compound of formula (I) is not 5-methyl-2-phenyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile.

- 2) (Previously Presented) A compound according to claim 1, wherein R₁ and R₂ either:

- a) independently represent hydrogen or a group chosen from an alkyl, alkenyl and alkynyl groups; wherein each alkyl, alkenyl and alkynyl group independently has from 1 to 4 carbon atoms and each is independently optionally substituted by one hydroxy group or a cycloalkyl group having from 3 to 6 carbon atoms;

or

- b) R₁ and R₂ form, together with the nitrogen atom to which they are attached, a 4- to 6-membered ring having from 1 to 2 heteroatoms chosen

from nitrogen, oxygen and sulphur, which ring is optionally substituted by one or two C₁-C₄ alkyl groups, wherein each C₁-C₄ alkyl group is independently unsubstituted or substituted by one hydroxy group.

3) (Previously Presented) A compound according to claim 1, wherein R₁ either:

a) represents a hydrogen atom or an alkyl group having from 1 to 4 carbon atoms

or

b) forms together with R₂ and with the nitrogen atom to which they are attached, a 4- to 6-membered ring having from 1 to 2 heteroatoms chosen from nitrogen and oxygen, which ring is optionally substituted by one or more substituents chosen from halogen atoms, alkyl and acyl groups.

4) (Previously Presented) A compound according to claim 1, wherein R₂ either:

a) represents a group chosen from alkyl, alkenyl, alkynyl, cycloalkyl, hydroxyalkyl and di-alkylamino groups;

or

b) forms together with R₁ and with the nitrogen atom to which they are attached, a 4- to 6-membered ring comprising from 1 to 2 heteroatoms chosen from nitrogen and oxygen, which ring is optionally substituted by one or more substituents chosen from halogen atoms, alkyl and acyl groups.

- 5) (Previously Presented) A compound according to claim 1, wherein R₃ represents a group of formula



wherein n is an integer from 0 to 4 and G represents a monocyclic aryl or heteroaryl group comprising zero or one heteroatoms, which aryl or heteroaryl group is optionally substituted by one or more substituents chosen from:

- (i) halogen atoms; and
 - (ii) unsubstituted C₁-C₈ alkyl, unsubstituted C₁-C₈ alkoxy, unsubstituted C₁-C₃ alkenedioxy, nitro, trifluoromethyl and unsubstituted alkoxy carbonyl groups having a C₁-C₈ alkyl portion.
- 6) (Previously Presented) A compound according to claim 1, wherein R₄ is hydrogen, an unsubstituted C₁-C₈ alkyl or an unsubstituted C₅-C₁₄ aryl group.
- 7) (Previously Presented) A compound according to claim 6, wherein R₄ represents an unsubstituted C₁-C₄ alkyl group.
- 8) (Previously Presented) A compound according to claim 1, wherein R₃ represents a group chosen from phenyl, pyridyl and benzyl groups, wherein the phenyl, pyridyl and benzyl groups are optionally substituted by one or more substituents chosen from:
- (i) halogen atoms; and
 - (ii) unsubstituted C₁-C₈ alkyl, unsubstituted C₁-C₈ alkoxy, unsubstituted C₁-C₃ alkenedioxy, nitro, trifluoromethyl and unsubstituted alkoxy carbonyl groups having a C₁-C₈ alkyl portion.

- 9) (Previously Presented) A compound according to claim 8, wherein R₃ represents a phenyl or benzyl group substituted by one, two or three C₁-C₆ alkoxy groups.
- 10) (Currently Amended) A compound according to claim 9 wherein R₁ represents a hydrogen atom and R₂ represents
- (i) a group chosen from alkyl, alkenyl and alkynyl groups, wherein each alkyl, alkenyl and alkynyl group is independently optionally substituted by one or more substituents chosen from halogen atoms, hydroxy, alkoxy, aryloxy, alkylthio, hydroxycarbonyl, ~~alkoxy~~aryloxy, alkoxycarbonyl, mono- and di-alkylaminoacyl, oxo, amino, and mono- and di-alkylamino groups; or
 - (ii) a group of formula



wherein n is an integer from 0 to 4 and R⁶ represents a cycloalkyl or cycloalkenyl group.

- 11) (Previously Presented) A compound according to claim 1 chosen from:
4-(4-Ethylpiperazin-1-yl)-5-methyl-2-phenylthieno[2,3-d]pyrimidine-6-carbonitrile
4-(4-Ethylpiperazin-1-yl)-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-phenylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-phenyl-4-piperidin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-(4-nitrophenyl)-4-piperidin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-piperidin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(4-methylpiperazin-1-yl)-2-(4-nitrophenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-phenyl-4-piperazin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-pyrrolidin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-piperazin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-(4-nitrophenyl)-4-piperazin-1-ylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Dibutylamino)-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Chlorophenyl)-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxyphenyl)-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[Ethyl(methyl)amino]-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(4-nitrophenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Chlorophenyl)-4-(diethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-2-(3,4-dimethoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Dimethylamino)-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Chlorophenyl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(4-Methoxyphenyl)-5-methyl-4-[methyl(prop-2-ynyl)amino]thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)(methyl)amino]-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxyphenyl)-4-[ethyl(methyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-(4-methylphenyl)-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-[4-(trifluoromethyl)phenyl]thieno[2,3-d]pyrimidine-6-carbonitrile

4-[Allyl(methyl)amino]-2-(4-methoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxyphenyl)-4-[(2-hydroxyethyl)(methyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxyphenyl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-2-(4-methylphenyl)-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(4-methylpiperazin-1-yl)-2-[4-(trifluoromethyl)phenyl]thieno[2,3-d]pyrimidine-6-carbonitrile

2-(1,3-Benzodioxol-5-yl)-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(4-methylphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(1,3-Benzodioxol-5-yl)-4-(diethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(1,3-Benzodioxol-5-yl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[Ethyl(methyl)amino]-5-methyl-2-pyridin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[Ethyl(methyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-Benzyl-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-morpholin-4-yl-2-pyridin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)(methyl)amino]-5-methyl-2-pyridin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(1,3-Benzodioxol-5-yl)-4-[(2-hydroxyethyl)(methyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)(methyl)amino]-5-methyl-2-(4-methylphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-pyridin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile
2-(3,4-Dimethoxyphenyl)-4-(dimethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxyphenyl)-5-methyl-4-(propylamino)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-Benzyl-4-(diethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile
5-Methyl-4-(4-methylpiperazin-1-yl)-2-phenylthieno[2,3-d]pyrimidine-6-carbonitrile
5-Methyl-4-morpholin-4-yl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)methylamino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,5-Dimethoxyphenyl)-5-methyl-4-(4-methylpiperazin-1-yl)-thieno[2,3-d]pyrimidine-6-carbonitrile

4-Diethylamino-2-(3,5-dimethoxyphenyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,5-Dimethoxyphenyl)-4-(ethylmethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(6-Cyano-4-diethylamino-5-methylthieno[2,3-d]pyrimidin-2-yl)-benzoic acid methyl ester

4-[6-Cyano-4-(ethylmethylamino)-5-methylthieno[2,3-d]pyrimidin-2-yl]-benzoic acid
methyl ester

2-Benzyl-5-methyl-4-morpholin-4-yl-thieno[2,3-d]pyrimidine-6-carbonitrile

2-Benzyl-4-[(2-hydroxyethyl)methylamino]-5-methylthieno[2,3-d]pyrimidine-6-
carbonitrile

5-Methyl-4-(4-methylpiperazin-1-yl)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-
d]pyrimidine-6-carbonitrile

Methyl 4-(6-cyano-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidin-2-yl)benzoate

Methyl 4-[6-cyano-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidin-2-
yl]benzoate

Methyl 4-[6-cyano-4-(dimethylamino)-5-methylthieno[2,3-d]pyrimidin-2-yl] benzoate

Methyl 4-[6-cyano-4-[(2-hydroxyethyl)(methyl)amino]-5-methylthieno[2,3-d]pyrimidin-
2-yl]benzoate

5-methyl-4-(methylamino)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-
carbonitrile

4-(Dimethylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-
carbonitrile

4-(Ethylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-
carbonitrile

5-Methyl-4-(propylamino)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-
carbonitrile

4-(Butylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-
carbonitrile

4-(Isopropylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(sec-Butylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Isobutylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(1-Ethylpropyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(tert-Butylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclopropylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclobutylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclopentylamino)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[Allyl(methyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-[methyl(prop-2-ynyl)amino]-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Methoxyethyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[[2-(Dimethylamino)ethyl]amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno [2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(3-methylpiperazin-1-yl)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(3,5-Dimethylpiperazin-1-yl)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(4-Acetyl piperazin-1-yl)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Aminoethyl)(methyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

N-[6-Cyano-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidin-4-yl]-beta-alanine

5-Methyl-4-(1H-pyrazol-1-yl)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(1H-Imidazol-1-yl)-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(2H-1,2,3-triazol-2-yl)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(1H-1,2,4-triazol-1-yl)-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-5-methyl-4-(4-methylpiperazin-1-yl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-5-methyl-4-(methylamino)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-(ethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-5-methyl-4-(propylamino)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclopropylamino)-2-(3,4-dimethoxybenzyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclobutylamino)-2-(3,4-dimethoxybenzyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-(dimethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-[ethyl(methyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-2-(3,4-dimethoxybenzyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[Allyl(methyl)amino]-2-(3,4-dimethoxybenzyl)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-5-methyl-4-[methyl(prop-2-ynyl)amino]thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-[(2-hydroxyethyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-[(2-hydroxyethyl)(methyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,4-Dimethoxybenzyl)-4-[(2-methoxyethyl)amino]-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-[[2-(Dimethylamino)ethyl](methyl)amino]-5-methyl-2-(3,4,5-trimethoxyphenyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-morpholin-4-yl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(4-methylpiperazin-1-yl)-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(methylamino)-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Ethylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(propylamino)-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Isopropylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(sec-Butylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(1-Ethylpropyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(tert-Butylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclopropylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclobutylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Dimethylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[Ethyl(methyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[Allyl(methyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-[methyl(prop-2-ynyl)amino]-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Methoxyethyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-[(2-Hydroxyethyl)(methyl)amino]-5-methyl-2-(3,4,5-trimethoxybenzyl) thieno[2,3-d]pyrimidine-6-carbonitrile

5-methyl-4-(4-methylpiperazin-1-yl)-2-(2-phenylethyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Cyclobutylamino)-5-methyl-2-(2-phenylethyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(2-phenylethyl)thieno[2,3-d]pyrimidine-6-carbonitrile

5-Methyl-4-(4-methylpiperazin-1-yl)-2-(3-phenylpropyl)thieno[2,3-d]pyrimidine-6-carbonitrile

4-(Diethylamino)-5-methyl-2-(3-phenylpropyl)thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,5-Dimethoxy-phenyl)-4-[(2-hydroxy-ethyl)-methyl-amino]-5-methyl-thieno[2,3-d]pyrimidine-6-carbonitrile

2-(3,5-Dimethoxy-phenyl)-5-methyl-4-morpholin-4-ylthieno[2,3-d]pyrimidine-6-carbonitrile

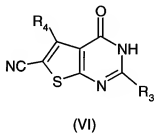
2-(3,5-Dimethoxyphenyl)-4-(ethylamino)-5-methylthieno[2,3-d]pyrimidine-6-carbonitrile

4-(Isobutylamino)-5-methyl-2-(3,4,5-trimethoxybenzyl)thieno[2,3-d]pyrimidine-6-carbonitrile

and pharmaceutically acceptable salts thereof.

- 12) (Previously Presented) A process for the preparation of a compound as claimed in claim 1, comprising:

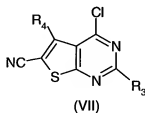
(a) reacting the thienopyrimidinone of formula (VI)



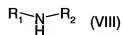
with a chlorinating agent

(b) removing after cooling the excess of chlorinating agent

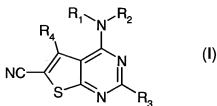
(c) optionally isolating the chlorothienopyrimidine of formula (VII)



(d) reacting the chlorothienopyrimidine of formula (VII) with an amine (VIII)



in a closed atmosphere at temperatures ranging from 40°C to 120 °C to produce a compound of formula (I):



and

(e) optionally preparing a pharmaceutically acceptable salt from a compound of formula (I).

- 13) (Cancelled)
- 14) (Previously Presented) A pharmaceutical composition comprising at least one compound according to claim 1 and a pharmaceutically acceptable diluent or carrier.
- 15) (Cancelled)
- 16) (Cancelled)
- 17) (Cancelled)
- 18) (Previously Presented) A method for treating a subject afflicted with a pathological condition or disease susceptible to amelioration by inhibition of PDE7 comprising administering to the said subject an effective amount of at least one compound according to claim 1.
- 19) (Previously Presented) A method according to claim 18, wherein the pathological condition or disease is chosen from asthma, atopic dermatitis, chronic

obstructive pulmonary disease, Crohn's disease, type I and type II diabetes, lymphoid leukemia and other forms of cancer, multiple sclerosis, allograft rejection after organ transplantation, psoriasis, rheumatoid arthritis, and ulcerative colitis.

20) (Previously Presented) A combination product comprising:

- a) at least one compound according to claim 1; and
- b) at least one compound chosen from (a) PDE4 inhibitors, (b) A_{2A} adenosine receptor antagonists, (c) NSAIDs, (d) COX-2 inhibitors, (e) TNF- α inhibitors and (f) steroids;

for simultaneous, separate or sequential use.

21) (Previously Presented) A method for the treatment or prevention of T cell mediated immune diseases and diseases of the airways in a subject comprising administering to the said subject an effective amount of at least one compound according to claim 1.

22) (Previously Presented) A composition comprising:

- a) at least one compound according to claim 1; and
- b) at least one compound chosen from (a) PDE4 inhibitors, (b) A_{2A} adenosine receptor antagonists, (c) NSAIDs, (d) COX-2 inhibitors, (e) TNF- α inhibitors and (f) steroids.